

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Kenji ASAKURA et al.

Confirmation No.: 8733

Appln. No. : 10/542,006

Examiner: Quana M. Grainger

Filed : July 12, 2005

Group Art Unit: 2852

For : IMAGE HEATING APPARATUS AND IMAGE FORMING APPARATUS

RESPONSE UNDER 37 C.F.R. § 1.111

Commissioner for Patents
U.S. Patent and Trademark Office
Customer Service Window, Mail Stop Amendment
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Sir:

In response to the outstanding Official Action of September 20, 2006, in which a three-month shortened statutory period for response was set to expire on December 20, 2006, Applicants respectfully request reconsideration and withdrawal of the outstanding rejections in view of the herein contained remarks:

Amendments to the Specification begin on page 2 of this Response.

Amendments to the Claims begin on page 3 of this Response.

Remarks begin on page 9 of this Response.

AMENDMENTS TO THE SPECIFICATION

Please amend the title of the present application to read as follows:

"IMAGE HEATING APPARATUS FOR FIXING AN UNFIXED IMAGE, AND
IMAGE FORMING APPARATUS UTILIZING THE SAME".

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An image heating apparatus comprising:

a rotatable ring-shaped heat-producing medium that produces heat ~~through~~ by action of magnetic flux;

a magnetic flux ~~generation section that is located in proximity~~ generator positioned proximate to a first peripheral surface of said heat-producing medium and generates magnetic flux that acts upon said heat-producing medium;

a magnetic flux ~~adjustment section~~ adjuster that is ~~located rotatably in proximity~~ rotatably positioned proximate to a second peripheral surface of said heat-producing medium, and has a paper passage area magnetic flux adjustment ~~medium~~ unit that adjusts magnetic flux acting upon a paper passage area of said heat-producing medium, and a paper non-passage area magnetic flux adjustment ~~medium~~ unit, with a different rotational phase from said paper passage area magnetic flux adjustment ~~medium~~ unit, that adjusts magnetic flux acting upon a paper non-passage area of said heat-producing medium; and

a synchronization ~~control section~~ controller that controls a timing of magnetic flux generation ~~timing of~~ by said magnetic flux ~~generation section~~ generator in synchronization with rotational phases of the magnetic flux adjustment units of said magnetic flux ~~adjustment section~~ adjuster.

2. (Currently Amended) The image heating apparatus according to claim 1, wherein a rotational speed of said magnetic flux ~~adjustment section~~ adjuster is different from a rotational speed of said heated heat-producing medium.

3. (Currently Amended) The image heating apparatus according to claim 1, wherein said magnetic flux ~~adjustment section~~ adjuster rotates an integral number of

times while an ~~arbitrary~~ a predetermined part of said heat-producing medium passes through an area opposite said magnetic flux ~~generation-section~~ generator.

4. (Currently Amended) The image heating apparatus according to claim 1, wherein a direction of rotation of said magnetic flux ~~adjustment-section~~ adjuster is the ~~reverse of~~ opposite to a direction of rotation of said heat-producing medium.

5. (Currently Amended) The image heating apparatus according to claim 1, wherein a downstream end of an area of said magnetic flux ~~adjustment-section~~ adjuster opposite said magnetic flux ~~generation-section~~ generator rotates at a speed greater than or equal to the speed of movement up to an upstream end on an opposite side while an arbitrary part of said heat-producing medium enters and passes through an area opposite said magnetic flux ~~generation-section~~ generator.

6. (Currently Amended) The image heating apparatus according to claim 1, wherein said magnetic flux ~~adjustment-section~~ adjuster has a configuration in which said paper passage area magnetic flux adjustment ~~medium~~ unit and said paper non-passage area magnetic flux adjustment ~~medium~~ unit are provided on a peripheral surface of a cylindrical body.

7. (Currently Amended) The image heating apparatus according to claim 6, wherein a plurality of said paper non-passage area magnetic flux adjustment ~~media~~ units are located alternately in a circumferential direction of a center part and both end parts of a surface of said ~~opposed-core~~ magnetic flux adjuster.

8. (Currently Amended) The image heating apparatus according to claim 6, wherein an upstream end of said paper non-passage area magnetic flux adjustment ~~medium~~ unit is positioned in a center part of said ~~opposed-core~~ magnetic flux adjuster and downstream ends of said paper non-passage area magnetic flux adjustment ~~medium~~ unit are positioned at both ends of said ~~opposed-core~~ magnetic flux adjuster.

9. (Currently Amended) The image heating apparatus according to claim 8, wherein a plurality of said paper non-passage area magnetic flux adjustment ~~media~~ units are located alternately in a circumferential direction of a surface of said ~~opposed~~ core magnetic flux adjuster.

10. (Currently Amended) An image heating apparatus comprising:

a rotatable ring-shaped heat-producing medium that produces heat ~~through~~ by action of magnetic flux;

a magnetic flux ~~generation-section~~ generator that is located ~~in proximity~~ positioned proximate to a first peripheral surface of said heat-producing medium and generates magnetic flux that acts upon said heat-producing medium;

a temperature ~~control-section~~ controller that controls said magnetic flux ~~generation-section~~ generator and maintains a temperature of a surface of said heating ~~heat-producing~~ medium ~~in contact with a heated medium~~ at a predetermined temperature; and

a calorific value distribution ~~adjustment-section~~ adjuster that selectively adjusts magnetic flux acting upon a predetermined area of said heat-producing medium and ~~uniformizes~~ equalizes a calorific value distribution of said heat-producing medium.

11. (Currently Amended) The image heating apparatus according to claim 10, wherein said calorific value distribution ~~adjustment-section~~ adjuster has a magnetic body opposite said magnetic flux ~~generation-section~~ generator.

12. (Currently Amended) The image heating apparatus according to claim 10, wherein said calorific value distribution ~~adjustment-section~~ adjuster has an electrical conductor opposite said magnetic flux ~~generation-section~~ generator.

13. (Currently Amended) The image heating apparatus according to claim 6, wherein said calorific value distribution ~~adjustment-section~~ is equipped with adjuster

~~includes~~ a suppression coil ~~composed of~~ comprising an electrical conductor that is linked to magnetic flux generated by said magnetic flux generation-section generator.

14. (Currently Amended) An image forming apparatus comprising:

the image heating apparatus according to claim 1;

a first temperature sensor that detects a temperature of a paper passage area of said heat-producing medium and sends a heat-producing medium paper passage area detected temperature signal to said ~~temperature control section~~ synchronization controller; and

a second temperature sensor that detects a temperature of a paper non-passage area of said heat-producing medium and sends a heat-producing medium paper non-passage area detected temperature signal to said ~~temperature control section~~ synchronization controller;

wherein said ~~synchronization control section~~ controller controls a timing of magnetic flux generation ~~timing of~~ by said magnetic flux generation-section generator in synchronization with respective rotational phases of the magnetic flux adjustment ~~unit-s~~ units of said magnetic flux ~~adjustment section~~ adjuster based on a detected temperature signal from said second temperature sensor.

15. (Currently Amended) An image forming apparatus comprising:

the image heating apparatus according to claim 10;

a first temperature sensor that detects a temperature of a paper passage area of said heat-producing medium and sends a heat-producing medium paper passage area detected temperature signal to said ~~temperature control section~~ controller; and

a second temperature sensor that detects a temperature of a paper non-passage area of said heat-producing medium and sends a heat-producing medium paper non-

passage area detected temperature signal to said temperature ~~control-section~~
controller;

wherein said calorific value distribution ~~adjustment-section~~ adjuster selectively
adjusts magnetic flux acting upon a predetermined area of said heat-producing medium
and ~~uniformizes~~ equalizes a calorific value distribution of said heat-producing medium
based on a detected temperature signal from said second temperature sensor.

16. (Currently Amended) An image forming apparatus comprising:

the image heating apparatus according to claim 10;

a rotatable pressure member that ~~rotates~~ and applies pressure to said heat-
producing medium;

a first pressure member temperature sensor that detects a temperature of a
paper passage area of said pressure member and sends a pressure member paper
passage area detected temperature signal to said temperature ~~control-section~~
controller; and

a second pressure member temperature sensor that detects the a temperature of
a paper non-passage area of said pressure member and sends a pressure member
paper non-passage area detected temperature signal to said temperature ~~control~~
section controller;

wherein said calorific value distribution ~~adjustment-section~~ adjuster selectively
adjusts a magnetic flux acting upon a predetermined area of said heat-producing
medium and ~~uniformizes~~ equalizes a calorific value distribution of said heat-producing
medium based on a detected temperature signal from said second pressure
temperature sensor.

17. (New) An image heating apparatus comprising:

a rotatable heat-producing element configured to produce heat by action of a magnetic flux;

a magnetic flux generator positioned proximate to a first peripheral portion of said heat-producing element and configured to generate magnetic flux that acts upon said heat-producing element;

a rotatable magnetic flux adjuster that is positioned proximate to a second peripheral portion of said heat-producing element, and has a recording medium passage area magnetic flux adjustment unit that adjusts the magnetic flux acting upon a recording medium passage area of said heat-producing element, and a recording medium non-passage area magnetic flux adjustment unit having a different rotational phase from said recording medium passage area magnetic flux adjustment unit, that adjusts a magnetic flux acting on a recording medium non-passage area of said heat-producing medium; and

a synchronization controller that controls a timing of magnetic flux generation by said magnetic flux generator in synchronization with rotational phases of the magnetic flux adjustment units of said magnetic flux adjuster.

18. (New) The image heating apparatus according to claim 17, wherein said recording medium passage area magnetic flux adjustment unit and said recording medium non-passage area magnetic flux adjustment unit comprise peripheral surfaces of a cylindrical body.

19. (New) The image heating apparatus according to claim 17, further comprising at least one temperature sensor positioned to detect a temperature of a recording medium passage area of said heat-producing element, wherein said synchronization controller controls a timing of magnetic flux generation by said magnetic flux generator in synchronization with respective rotational phases of the magnetic flux

adjustment units of said magnetic flux adjuster based on a temperature detected by said at least one temperature sensor.

20. (New) The image heating apparatus according to claim 17, wherein a direction of rotation of said magnetic flux adjuster is opposite to a direction of rotation of said heat-producing element.

REMARKS

Upon entry of the present amendment, claims 1-16 will have been amended while claims 17-20 will have been submitted for consideration by the Examiner. The amendments to the claims have not been made in view of the prior art but have merely been made in order to eliminate any possible informalities with regard to idiom, syntax or grammar. Accordingly, no prosecution history estoppel should result from these changes.

Initially, Applicants respectfully thank the Examiner for explicitly acknowledging their claim for foreign priority under 35 U.S.C. § 119 as well as for confirming receipt of the certified copy of the foreign priority document.

Applicants additionally thank the Examiner for accepting the drawings filed in the present application concurrently with the present application on July 12, 2005.

Additionally, Applicants respectfully thank the Examiner for considering the items of information contained in the Information Disclosure Statement filed in the present Application on October 12, 2005, by the return of the signed and initialed PTO-1449 Form attached to the Information Disclosure Statement.

In the outstanding Official Action, the Examiner asserted that the title of the invention is not descriptive and, accordingly, requested that Applicants submit a new title that is more clearly indicative of the invention to which the claims are directed.

By the present response, Applicants have submitted a new title which is clearly indicative of the invention to which the claims are directed.

Turning to the merits of the Official Action, the Examiner rejected claims 1, 2, 5-10 and 12 under 35 U.S.C. § 102(d) as being anticipated by KATO (U.S. Patent Application Publication No. 2004/0253027).

The Examiner indicated that claims 3, 4, 11 and 13-16 are rejected for being dependent upon a rejected base claim. However, the Examiner indicated that these claims would be allowable if rewritten into independent form including all the limitations of the base claim and any intervening claims.

Applicants respectfully thank the Examiner for his indication of allowable subject matter and agree that at least these claims are allowable. However, Applicants further submit that in view of the clear basis for the patentability of all the claims in the present application, there is no need to rewrite these claims into independent form at the present time. Thus, Applicants respectfully decline to do so.

As noted above, the Examiner rejected various claims in the present application under 35 U.S.C. § 102(e) as anticipated by KATO et al. However, Applicants respectfully submit that the disclosure of KATO et al. is not available as a reference against the claims in the present application under 35 U.S.C. § 102(e).

In particular, Applicants note that the present application was filed as a National Stage Application, under 35 U.S.C. § 371, of International Application PCT/JP04/00169 that was filed on January 14, 2004. Accordingly, the domestic priority date to which the present application is entitled is before the filing date of the KATO et al. published application. In this regard, Applicants note that the U.S. filing date of KATO et al. is June 8, 2004, while the present application is entitled to a U.S. filing date of January 14, 2004.

Accordingly, at least for this reason, it is respectfully submitted that KATO et al. is an inappropriate basis for the rejection of any of the claims in the present application. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the outstanding rejection asserted against the claims in the present application at least due

to non-availability of the disclosure of the above-noted KATO et al. published application.

Moreover, Applicants do not in any manner acquiesce that in the absence of such non-availability, the disclosure of KATO et al. would be relevant to the claims in the present application.

By the present response, Applicants have submitted several additional claims for consideration by the Examiner to afford Applicants the scope of protection to which they are entitled. Consideration and allowance of these claims is respectfully requested, in due course.

SUMMARY AND CONCLUSION

Applicants have made a sincere effort to place the present application in condition for allowance and believes that they have now done so. Applicants have amended the claims but only to clarify the recitations thereof by eliminating informalities relating to syntax, idiom and grammar, as appropriate. Applicants' amendments have not narrowed the claims and thus do not give rise to any prosecution history estoppel.


Applicants have traversed the Examiner's rejection by pointing out that the document relied upon is unavailable as a reference against the claims of the present application under 35 U.S.C. § 102(e). Accordingly, Applicants have provided a clear evidentiary basis supporting the patentability of all the claims in the present application and respectfully request an indication to such effect, in due course.

Any amendments to the claims which have been made in this amendment, and which have not been specifically noted to overcome a rejection based upon the prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

Should an extension of time be necessary to maintain the pendency of this application, including any extensions of time required to place the application in condition for allowance by an Examiner's Amendment, the Commissioner is hereby authorized to charge any additional fee to Deposit Account No. 19-0089.

Should the Examiner have any questions or comments regarding this Response, or the present application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

December 4, 2006
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